

# EFFECT OF DUST LEVEL AND LABOR CHARACTERISTICS ON PULMONARY FUNCTION

## (A Case Study of Labor in Production at PT. Atlantic Anugrah Metalindo in 2022)

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### ABSTRACT

PT. Atlantic Anugrah Metalindo is an industry engaged in International standard manufacturing and fabrication. This industry produces fire-resistant steel door system as well as other metal products such as Railing, Laser Cut Metal, etc. Workers in the production department are at risk of exposure to dust from the production process. Continuous exposure will affect pulmonary function capacity, resulting in respiratory disorders can also be influenced by other factors, namely the characteristics of workers. The purpose of this research is to analyze the effect of dust level and workers characteristics on pulmonary function.

This type of research was an observational study with a cross-sectional approach. Data was collected through observation and interviews. The sample size taken was 25 workers with 13 workers in the powder coating area, 2 workers in the laser area 1, 2 workers in the laser area 2, 6 workers in the grinding area, and 2 workers in the office area. The sampling technique used was Simple Random Sampling by lottery. The data obtained will be analyzed using the non-parametric test.

The results showed that the dust content that exceeded the Threshold Value (10 mg/m<sup>3</sup>) was in the powder coating area. The results of statistical tests on the effect of age on lung function  $p = 0.029 \leq 0.05$ , the results of the effect of working mass on lung function  $p = 0.028 \leq 0.05$ , the effect of smoking on lung function  $p = 0.365 > 0.05$ , and the effect of wearing a mask on pulmonary function  $p = 0.33 \leq 0.05$ .

Based on the results of the study, it can be concluded that age, working mass, and the use of masks have an effect on lung function in production workers at PT. Atlantic Anugrah Metalindo. Suggestions for workers to always use masks when working to reduce chemicals that enter the respiratory tract. And suggestions for companies to carry out regular health checks on workers.

*Keywords : Dust level, pulmonary function, labor characteristics*